

Date: Mon, 19 Apr 93 11:48:28 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #481
To: Info-Hams

Info-Hams Digest Mon, 19 Apr 93 Volume 93 : Issue 481

Today's Topics:

9913 Equivalent Water Trouble
Alinco DJ-580 buttons (2 msgs)
ARRL BULLETIN 41 ARLB041
cw software
Equipment for a shuttle contact?
Fact or Fiction???
KA6MWT sez Reallocate 10meters to CB?!!!
License Delay, 8 weeks
New hams and no-codes come to rescue
rec.radio.amateur reorg: current/evolving proposal 4/17
Reciprical license in ENGLAND
System disruption
VLF Receiver
Which kind of aerial is good for fox hunting

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 18 Apr 93 23:08:22 EDT
From: psinntp!arrl.org@uunet.uu.net
Subject: 9913 Equivalent Water Trouble
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, gary@ke4zv.uucp (Gary Coffman) writes:
>In article <1385@arrl.org> zlau@arrl.org (Zack Lau) writes:
>>In rec.radio.amateur.misc, gary@ke4zv.uucp (Gary Coffman) writes:

>>>Oh dear, that's not good. RTV contains acetic acid, that vinegar smell,
>>>and it's very corrosive to copper. You shouldn't use that around electrical
>>>wiring.

I believe RTV stands for Room Temperature Vulcanizing, but haven't
seen an "official reference" This would imply that RTV could be
corrosive, though I haven't seen the stuff containing vinegar labeled
RTV.

>>>

>>According to a tube of T-60 Electrically conductive RTV by SWS
>>Silicones Corp of Adrian MI, it releases cyclohexylamine . I'm
>>pretty sure this stuff doesn't damage wiring :-).

>

>Well there's RTV, then there's RTV. The stuff you find
>at the hardware store, Dow Corning, GE, and others, *does*
>release acetic acid. The sniff test is reliable. If it smells
>like vinegar, don't use it. I wouldn't glob *conductive* material

I don't advise the sniff test--no telling how sensitive you
are to these chemicals, which is probably why they use acetic
acid in hardware store stuff. Dow Corning has a product called
3140 RTV coating that is specifically designed to be compatible
with copper. It warns that it forms trace amounts of methanol
when exposed to water. It also warns that overexposure may cause
drowsiness. Something to keep in mind if you are going to be
climbing a tower...

>into 9913 in any event. It's going to create a short. That's
>why I use vacuum grease. It's non-conductive and non-corrosive.

I used the conductive example to show that it was intended
for wiring. Hopefully I'm not overestimating the intelligence
of people on the Net :-).

Anyone have a simple way to determine whether a non-metal
will promote corrosion--without needing a degree in chemistry?

Zack Lau KH6CP/1

Internet: zlau@arrl.org

"Working" on 24 GHz SSB/CW gear

Operating Interests: 10 GHz CW/SSB/FM

US Mail: c/o ARRL Lab

80/40/20 CW

225 Main Street

Station capability: QRP, 1.8 MHz to 10 GHz

Newington CT 06111

modes: CW/SSB/FM/packet

amtor/baudot

Phone (if you really have to): 203-666-1541

Date: Mon, 19 Apr 1993 15:23:00 GMT
From: usc!howland.reston.ans.net!bogus.sura.net!darwin.sura.net!
martha.utcc.utk.edu!utkvx.utk.edu!pratt@network.UCSD.EDU
Subject: Alinco DJ-580 buttons
To: info-hams@ucsd.edu

I have had my Alinco 580 for only about a month or so, and the black text on the keypad buttons is already wearing off. I know others have had this problem....Has anyone contacted Alinco about this? If so, what is their solution?

Thanks,
Mark Pratt
Technician (waiting for callsign)

Date: 19 Apr 93 17:23:11 GMT
From: swrinde!gatech!concert!duke!news.duke.edu!ee.egr.duke.edu!
jbs@network.UCSD.EDU
Subject: Alinco DJ-580 buttons
To: info-hams@ucsd.edu

In article <19APR199310231992@utkvx.utk.edu> pratt@utkvx.utk.edu (Mark E. Pratt) writes:

>I have had my Alinco 580 for only about a month or so, and the black text on
>the keypad buttons is already wearing off. I know others have had this
>problem....Has anyone contacted Alinco about this? If so, what is their
>solution?

The soft case worked for me. I bought the 580 last June and the soft case a few weeks later, and the print on my keys looks like new. My only complaint is that there's not a custom soft case to fit the 580 with the large battery pack on it.

-joe, KD4LLV

--

You spend the night
Like you were spending a dime
- Lyle Lovett

Date: Mon, 19 Apr 93 14:30:17 GMT
From: swrinde!zaphod.mps.ohio-state.edu!mstar!n8emr!bulletin@network.UCSD.EDU

Subject: ARRL BULLETIN 41 ARLB041
To: info-hams@ucsd.edu

```
=====
| Automatic relayed from packet radio via |
| N8EMR's Ham BBS, 614-895-2553 |
=====
```

ZCZC AG82
QST DE W1AW
ARRL BULLETIN 41 ARLB041
FROM ARRL HEADQUARTERS
NEWINGTON CT APRIL 13, 1993
TO ALL RADIO AMATEURS

SB QST ARL ARLB041
ARRLB041 ELECTRONIC FILINGS

ELECTRONIC FILINGS

THE FCC ON APRIL 1 CHANGED ITS RULES TO ALLOW FOR THE EVENTUAL
'ELECTRONIC' FILING OF LICENSE APPLICATIONS IN THE PRIVATE RADIO
SERVICES. CURRENTLY ALL LICENSE APPLICATIONS MUST INCLUDE A
HANDWRITTEN SIGNATURE. LAST OCTOBER CONGRESS AMENDED THE
COMMUNICATIONS ACT OF 1934 TO ALLOW ELECTRONIC FILING OF
APPLICATIONS, APPLICATIONS SIGNED 'IN ANY MANNER OR FORM, INCLUDING
BY ELECTRONIC MEANS, AS THE COMMISSION MAY PRESCRIBE BY REGULATION.'

ANY CHANGES TO COME WILL ONLY BE AFTER THE FCC HAS ESTABLISHED
PROCEDURES FOR ELECTRONIC FILING FOR NOW AMATEURS, AND ALL OTHERS,
ARE STILL BOUND BY THE HANDWRITTEN SIGNATURE REQUIREMENT.
NNNN

Date: Mon, 19 Apr 1993 14:10:52 GMT
From: swrinde!elroy.jpl.nasa.gov!sdd.hp.com!saimiri.primite.wisc.edu!eng.ufl.edu!
usenet.ufl.edu!darwin.sura.net!wupost!uwm.edu!linac!uchinews!att-out!cbnews1!
dara@network.UCSD.EDU
Subject: cw software
To: info-hams@ucsd.edu

In article <C5Lp3I.LJB@world.std.com>, rsm@world.std.com (Robert Marlan) writes:
> could anyone suggest ftp sites and sources for mac and IBM
> CW programs. I would like programs where I could speed up the
> characters but slow down the spacing to help increase my
> cw speed from 15 to 20 WPM! Any suggests about increasing
> would be welcomed also. 73's

> bob kA6NOC
>
>

Bob : try supermorse for IBM pc. Latest version seems to be sm316
Look for sm316.zip at an ftp site like wuarchive.wustl.edu
directory is mirrors/msdos/hamradio
I have no connection except that I bought (it's shareware) the
previous version and found it to be excellent. I have even used
it to operate my rig as a keyboard.
It does use Fharnsworth method although I don't remember if you
can change the character speed.
73 Shel WA2UBK

Date: Mon, 19 Apr 1993 14:18:13 GMT
From: usc!wupost!uwm.edu!cs.utexas.edu!wotan.compaq.com!twisto.eng.hou.compaq.com!
cpqhou!trhodes@network.UCSD.EDU
Subject: Equipment for a shuttle contact?
To: info-hams@ucsd.edu

Last week I was able to hear the Shuttle downlink on 145.55
while I was driving down the road to work here in Houston.

Tom Rhodes KB9CTS

Date: Mon, 19 Apr 1993 00:21:06 GMT
From: usc!howland.reston.ans.net!gatech!asuvax!ennews!anasaz!bobm@network.UCSD.EDU
Subject: Fact or Fiction???
To: info-hams@ucsd.edu

The following is part of a message posted to the Hang Gliding mailing list
about FAA/FCC enforcement. Is this actually possible? Should I be xmitting
with both my radios at once to fool the system?

----- start message -----

The FCC also enforces in earnest. They recently collected \$60,000 in fines
from an unlicensed operator for broadcasting on the amateur radio
bands. The FCC is using a new device that records the exact location
of the transmitter and its "finger print". Apparently each
transmitter has a unique electronic signature that is comparable
to a finger print. This signature has been accepted by the court
as positive identification.

So do yourself a favor: Fly and land legal and don't transmit
on the amateur bands without a license.

Happy Regards,
Denny Dennison --- Hang III, Private Pilot, N6YFI
San Jose, California

----- end of message -----

bob maccione - N7TVT

Date: Mon, 19 Apr 1993 07:14:51 GMT
From: news.acns.nwu.edu!zaphod.mps.ohio-state.edu!howland.reston.ans.net!gatech!
asuvax!ennews!telesys!bradf!brad@network.UCSD.EDU
Subject: KA6MWT sez Reallocate 10meters to CB?!!!
To: info-hams@ucsd.edu

sohl,william h (whs70@dancer.cc.bellcore.com) wrote:
: Seems to me we need to better utilize 10m before we ask for more
: adjacent frequencies to the 10m band. I don't see why many local
: net type operations can't use 10m, especially at night. I'd
: think that would be better than running the same net on a 2m
: repeater or 2m simplex.

I've had many nice qso's on 10m during the evenings with local hams.
Not much going on around here for 10m net action tho ... except
for WB7CRK, Larry out here on the east side, who conducts a
crosslink to 2 meters. Gives the new no-coders a 'lil taste of HF.
Last summer we had several out of state checkin's ... Washington,
Montana, and such.

There is still a bit of a problem with getting a decent ground wave
signal ... and the lack of hams with a rig, or the ticket with the
privileges :-).

Hmmmm ... I wonder if anyone around here is doing 10m packet?

--
-= Brad Fisher -= (PPSEL) I'm just | Independant Computer
usenet: brad@bradf.tnet.com a | Consultant
-or-...!asuvax!ennews!telesys!bradf!brad wanna be | Mesa, Arizona 85203
packet: N7XSS@KC7Y.AZ.USA.NA UNIX guru!| 602/962-0566

Date: Mon, 19 Apr 1993 11:32:00 GMT
From: usc!howland.reston.ans.net!bogus.sura.net!darwin.sura.net!
mlb.semi.harris.com!SU19F.ess.harris.com!jhobson@network.UCSD.EDU
Subject: License Delay, 8 weeks
To: info-hams@ucsd.edu

I tested on 2/20/93 in Melbourne, FL. My ticket arrived 4/17/93, an
8 week delay. It was dated 4/13/93. Then I made a contact on 7.01 MHz.
I am happy now. The End.

Harv Hobson
WB4NPL
jhobson@su19f.ess.harris.com

Date: Mon, 19 Apr 1993 15:30:00 GMT
From: usc!howland.reston.ans.net!bogus.sura.net!darwin.sura.net!
martha.utcc.utk.edu!utkvx.utk.edu!pratt@network.UCSD.EDU
Subject: New hams and no-codes come to rescue
To: info-hams@ucsd.edu

It was reported in the RACK (Radio Amateur Club of Knoxville, TN) that during
the Blizzard of '93 (the snowstorm last month that halted the entire eastern
U.S.) most all of the amateur radio help came from new hams, most of whom were
no-coders. During the storm, the Knox county emergency communications radio
trunking system went out due to a power outage to the control repeater. So,
amateur radio volunteers with mobiles and HTs came to the rescue to ride along
with ambulance and police patrols to keep in contact with E-911.

Without these amateurs, it would have been a disastrous situation. Thus, the
no-coders showed their true spirit of dedication to the hobby of ham radio.

Think about that the next time you want to flame no-coders

Mark
waiting to get a no-code call

Date: Mon, 19 Apr 93 15:21:53 GMT
From: usc!howland.reston.ans.net!europa.eng.gtefsd.com!emory!sol.ctr.columbia.edu!
destroyer!cs.ubc.ca!unixg.ubc.ca!kakwa.ucs.ualberta.ca!alberta!adec23!
mark@network.UCSD.EDU
Subject: rec.radio.amateur reorg: current/evolving proposal 4/17
To: info-hams@ucsd.edu

ikluft@uts.amdahl.com (Ian Klufft) writes:

>rec.radio.amateur.rdf radio direction finding: recreational
> hunts and searches for interference
>rec.radio.amateur.antenna discussion of amateur radio antennas
There is the act of rdfing and then there is the equipment. equipment will
grey area into .antenna or .equipment AND .rdf. (Not a
disagreement with the proposal, just half hearted support :-)

>rec.radio.amateur.operating Operating procedures and questions: DX,
> CW, contests, propagation, repeaters
> alternatives proposed: r.r.a.dx and r.r.a.repeater
The .repeater group will degenerate (poor word!) I think into not much
different than .policy discussions. I'd stick with .operating with a good
short FAQ saying that .dx discussions are greatly welcomed (as the name
could add confusion for the .dxers, but much of what they will say WILL
be salient to operating procedures).

>Issues currently under discussion
>-----
>The following issues and notes relate to the discussions listed above:
>* a place for beginners to ask their typically-unfocused questions
> suggestions: r.r.a.beginner (markz/jbloom/emd)
> concerns: r.r.a.instruction allows enough room for license upgrades as well
> and r.r.a.beginner will have the same questions repeatedly (pschleck/
> ikluft/jgt10/kevin)
If I was a newbie on both USENET and Amateur Radio, I'd go to .misc first.
I am not sure we can focus beginners into any specific group, and once they
are less green under the collar, participation drops off quickly.

> results so far: only the name is in dispute, beginner or instruction will
> be on the CFV. r.r.a.instruction is slightly ahead - can everyone live
> with it?
.instruction since it encompasses more.

> results so far: only the definition is in dispute, dx or operating of some
> sort will be on the CFV. r.r.a.dx and r.r.a.operating seem to ruffle the
> fewest feathers - can everyone live with them?
I'd be saddened to see the .dx crowd not imparting their operating procedure
know how ;-), but yes, this proposal (I don't support the split of this group,
but this split sounds the best).

> To break the deadlock: can you live with r.r.a.construction? If not,
> should we roll up products/construction/technical and call them
> r.r.a.equipment? (That seems to fit the theme everyone is arguing over.)
I rest (what, you think you have worn me out! :-)) and support .equipment
as the meta for products/construction/technical/tech/homebrew/.shack (<---hmmm)

What do you mean the nntp link is down <shaking feverishly> -- 73 de VE6MGS/Mark

Date: Mon, 19 Apr 93 04:55:07 GMT
From: sdd.hp.com!zaphod.mps.ohio-state.edu!menudo.uh.edu!jpunix!unkaphaed!
coolguy@network.UCSD.EDU
Subject: Reciprical license in ENGLAND
To: info-hams@ucsd.edu

Does anyone have any information on reciprical licensing in England.
During the summer, I may be required to stay a week in London on my way
back from 4X4 land.
What kind of difficulties arise in carrying an HF rig into London.
I don't plan on using it and I really don't want to mess with Customs.

What is the best thing to do?

Thanks,
Guy

--
coolguy@unkaphaed.jpunix.com (Guy Shechter)
Unka Phaed's UUCP Thingy, Houston, TX, (713) 481-3763
1200/2400/9600/14400 v.32bis/v.42bis

Date: 19 Apr 93 18:16:30 GMT
From: news-mail-gateway@ucsd.edu
Subject: System disruption
To: info-hams@ucsd.edu

If your mail to me has been bouncing, it is because there's something
amiss with the VAXMAIL system I've been using. The problem is still being
worked, but I'm afraid that all mail I've received since the end of March
has been lost.

Sorry for the inconvenience.

73,
Dube AB5AP

Date: 19 Apr 93 07:38:05 EDT
From: psinntp!arrl.org@uunet.uu.net
Subject: VLF Receiver
To: info-hams@ucsd.edu

I'm looking for the 1980 or 1981 issue of either Radio Electronics or Popular Electronics which detailed how to construct a VLF Receiver.

The VLF Receiver uses a CA3028A IC and Rad Shack xformers for the various stages.

I can't seem to find these magazines at the libraries around here.

Any information would be appreciated.

73,

Joe, NJ1Q

| | |
|--------------------------------|-----------------------------------|
| Joe Carcia, NJ1Q | "The surest sign that Intelligent |
| ARRL Outgoing QSL Service Mgr. | life exists in the Universe is |
| American Radio Relay League | that NONE of it has ever visited |
| 225 Main St. | the Earth." - Calvin & Hobbs |
| Newington CT 06111-9965 | |
| (w) (203) 666-1541 ext. 274 | |
| (fax) (203) 665-7531 | |
| Internet: jcarcia@arrl.org | |

Date: Mon, 19 Apr 1993 15:22:05 GMT
From: usc!howland.reston.ans.net!gatech!kd4nc!ke4zv!gary@network.UCSD.EDU
Subject: Which kind of aerial is good for fox hunting
To: info-hams@ucsd.edu

In article <1993Apr18.072512.26562@uxmail.ust.hk> ee_hflo@uxmail.ust.hk (UST Radio Station) writes:

> Which kinds of aerial is good for fox hunting?
> Yagi or loop

Yes, both are useful. The yagi is best when the fox's signal is weak at your location. You can get a rough bearing by turning the yagi for peak reading. When the signals are a little stronger, the loop will give a sharper bearing. You turn it for a null in

signal strength. The loop is bidirectional so it's best to determine initial direction with the yagi and then zero in with the loop. Note that the yagi may have several minor lobes and you have to be sure you have found the major lobe during peaking. Multipath reflections can make accurate bearings with either method difficult.

Both of these antennas work by peaking or nulling the RF from the fox. Another system based on time of arrival called the double ducky can work better in situations where the signal is strong and you don't want to continuously play with attenuators to keep within the limits of the strength based methods. This method uses two vertical whips on a rotatable boom. The two antennas are alternately connected to the radio at an audio rate by diode switches. When a signal comes up, you'll hear a tone in the speaker. When the array is rotated so that both antennas are the same distance from the fox, broadside of the boom, the tone will suddenly disappear. This is a very sharp directional method that's not dependent on signal strength. It is, of course, bidirectional and you need some idea which direction is correct.

A more elaborate system is the doppler direction finder. This uses several antennas mounted in a circle. They are rapidly diode switched sequentially to simulate a single antenna being rapidly rotated in a circle. As the phantom antenna moves toward the fox, the frequency of the signal will rise, as it moves away from the fox, the frequency will drop. A synchronous phase detector is used to develop a signal to drive a set of LEDs set in a compass rose pattern. The direction to the fox will be marked by the lighted LED. This system is very powerful because it's easy to use while driving toward the fox. Just keep the LED indicating the direction of the fox aligned with the direction you drive. There's also another benefit in that you can see multipath. When there is multipath, several of the LEDs will flicker wildly. With experience you quickly learn what's real and what's multipath.

When you get in very close to the fox, a very small tuned loop on a handheld coupled by a wide range attenuator is very useful for sniffing out the terminal location. A 3 cm loop is about right for 2 meters. Or you can just put a dummy load on the HT and find the fox by "hot" and "cold" techniques of walking around the immediate area.

All of the methods above work at VHF and UHF. For HF fox hunting most of these methods are too cumbersome for mobile or handheld use. The ferrite loop reigns at lower HF frequencies because of it's compact size and sharp null. One with an adjustable dip angle can be used to get not only bearing, but also a good estimate of range by measuring the angle of arrival of the signal. For fixed

direction finding stations, the yagi, tuned loop, or doppler methods can be used if you have the space.

The doppler system is the all around best for finding jammers because it can get very quick readings for those short transmissions while you are in motion towards the target. The other methods often require a lot of patience, several stations, and a central plotting board.

I'm working on an automated fox locator system. I have a Loran C unit in my truck that gives continous position updates. I'm working on a system to pinpoint the direction of the truck nose. I've not had good luck yet with fluxgate compasses in the automotive environment and think I may need gyros. The course over ground information from the Loran is averaged too much to be useful. A pair of GPS receivers at the front and rear of the truck may be able to solve both problems, but they're still too expensive right now. These two pieces of information flow into a laptop computer along with relative bearing information from the doppler system. As I drive along a baseline, I expect the laptop software to plot a series of bearings on a map display so I can watch the solution box converge. When the fox location is sufficiently pinpointed, I'll be able to drive directly to it.

Gary

--

| | | | | |
|-----------------------------|--|--------------|--|--------------------------|
| Gary Coffman KE4ZV | | You make it, | | gatech!wa4mei!ke4zv!gary |
| Destructive Testing Systems | | we break it. | | uunet!rsiatl!ke4zv!gary |
| 534 Shannon Way | | Guaranteed! | | emory!kd4nc!ke4zv!gary |
| Lawrenceville, GA 30244 | | | | |

Date: Mon, 19 Apr 1993 10:57:47 GMT

From: news.Hawaii.Edu!uhunix.uhcc.Hawaii.Edu!shalamsk@ames.arpa

To: info-hams@ucsd.edu

References <1993Apr12.210150.15732@ttinews.tti.com>,

<1993Apr13.184121.16519@btree.uucp>,

<930414.234845.4W2.rusnews.w165w@garlic.sbs.com>/

Subject : Re: 10meters..and a mini flame.

>Wow, I hope you're being sarcastic. If not, you should join all the
>no-codes screaming for HF access because if you opened up the lower end
>of 10m to the CB'ers, the no-code bozos would definitely go ballistic!

>

>Tony

>

>-----

>-- Anthony S. Pelliccio, kd1nr/ae

>-- system @ garlic.sbs.com

>-----

I think I'd be somewhat perturbed about this myself!

I think that "no-code" hams are not intrinsically different from "coded" hams. Besides, if you decide not to talk to no-codes, YOU are the one who's missing out.

Aloha de KJ9U/KH6

--

INTERNET: shalamsk@uhunix.uhcc.hawaii.edu, kj9u@uhm.ampr.org

I speak for no one other than myself, of course.

Date: 19 Apr 93 08:27:10 -0700

From: usc!howland.reston.ans.net!wupost!gumby!destroyer!cs.ubc.ca!mala.bc.ca!

wagner@network.UCSD.EDU

To: info-hams@ucsd.edu

References <C5G08v.q0s@austin.ibm.com>, <20360144@hplsla.hp.com>, <C5pHuD.80J@athena.cs.uga.edu>c.c

Subject : Re: Chassis punches for tube sockets?

In article <C5pHuD.80J@athena.cs.uga.edu>, mcovingt@aisun3.ai.uga.edu (Michael Covington) writes:

> In article <20360144@hplsla.hp.com> tomb@hplsla.hp.com (Tom Bruhns) writes:
>

>>brand. Another handy tool is a Whitney hand punch, for holes
>>up to just over 1/4" for the "Jr." punch. There's a larger
>>one (XX?) that goes to bigger holes and has a deeper throat,
>>but the price is a bit steep. Though everyone calls them
>>just "Whitney," I believe the company is Roper-Whitney.

>

> There are actually 2 companies, Whitney (name preceded by 2 initials
> which I can't remember) and Roper Whitney. A friend of mine used
> to work for the first of the two. Same founder, same technology
> (both companies specialize in punching holes in metal); I think their
> tooling even fits each other's presses.

>

>

>

>

>

> --
> :- Michael A. Covington, Associate Research Scientist : *****
> :- Artificial Intelligence Programs mcovingt@ai.uga.edu : *****
> :- The University of Georgia phone 706 542-0358 : * * *
> :- Athens, Georgia 30602-7415 U.S.A. amateur radio N4TMI : ** *** ** <><

Speaking of hand punches. There is a little tool, made by "Adel Tool Co, Chicago, Ill" called a nibbler. It takes a bite aprox 1/16 by 1/4 on each action Will work on aluminum and up to .047 steel. I have made round holes by nibbles and then finished with a rat tail file. It is the only cheap way I have found to mount the "DB" type connectors used in computers.

--

73, Tom

=====
Tom Wagner, Audio Visual Technician. Malaspina College Nanaimo British Columbia
(604)753-3245, Loc 2230 Fax:755-8742 Callsign:VE7GDA Weapon:.45 Kentucky Rifle
Snail mail to: Site Q4, C2. RR#4, Nanaimo, British Columbia, Canada, V9R 5X9

I do not recyle..... I keep everything! (All standard disclaimers apply)
=====

End of Info-Hams Digest V93 #481
